

## ABSTRACT OF THE DISCLOSURE

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CRANKCASE SCAVENGED TWO-STROKE ENGINES

A crankcase scavenged two-stroke engine includes a piston (8) reciprocably mounted in a cylinder (2). The cylinder wall has an exhaust port (22) and a rear transfer port (24) opposed thereto formed in it. The rear transfer port (24) 10 communicates with the interior of the crankcase (14) via a rear transfer passage (27) and is arranged to open before the exhaust port (22) closes, whereby, in use, the cylinder is scavenged. An inlet duct (16) is arranged to supply combustion air to the crankcase (14) and a throttling valve (20) is arranged to throttle the flow of air through the inlet duct. A carburettor (18) is arranged to 15 supply fuel into the inlet duct. The interior of the crankcase (14) is divided into at least two separate crankcase volumes, a rich volume (V1,V2) and a lean volume (V3). Each crankcase volume communicates with the cylinder (2) via a respective hole in the crankcase wall. The cylinder wall also has at least one lateral transfer port (26) formed in it at a position between the rear transfer port 20 (24) and the exhaust port (22). The lateral transfer port (26) is arranged to open before the exhaust port (22) closes. The lateral transfer port (26) communicates with the lean volume (V3) via a lateral transfer passage (40). The rear transfer port (24) communicates with the rich volume (V1,V2). The inlet duct (16) is divided over at least part of its length into at least two inlet passages, a rich 25 passage (42) and a lean passage (44), which communicate with the rich volume (V1,V2) and the lean volume (V3), respectively. The carburettor (18) and/or the throttle valve (20) are so constructed and arranged that, under high load

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operation, substantially all the fuel supplied by the carburettor (18) is introduced into the rich passage (42) and, under low load operation, the fuel supplied by the carburettor is introduced into both the rich and lean passages (42,44).